Title:    **Disaster or Disastrous Management:  An Artificial Intelligence Analysis of the Disaster Literature entered into PubMed 1900-2016.**

       Preface

This book results from an Artificial Intelligence approach designed to identify, extract, organize, store, retrieve, and utilize essential data from scientific text. The subject chosen was disaster management. The essential data consist of author-specialists’ ideas. These are presented in the authors’ sentences and consist of pairs or more elaborate combinations of informative terms (nouns, adjectives, or gerunds)

The editors have a single, specific role. Namely, to be "reporters" of those facts. While one is a recognized disaster expert, the other has barely awareness of the subject. Instead, his specialty is the analysis of text. As such, the opinions expressed by the duo might be questionable. Instead, we chose to record the ideas from the global community.  As Jack Webb said -- "Just the facts and nothing but the facts."  Why PubMed?  Over 95% of the disaster literature is related, in one way or another, with health.  PubMed captures that literature from all journals.)

The total number of articles included in the analysis was 20,468 and yielded a total of 523,225 ideas.  These ideas were classified into dimensions describing the disaster topic.  Those dimensions are: personal, environmental, subject, interventional, outcome, and methods.  The analysis concentrates on three major objectives in disaster management: prevention, mitigation, and rehabilitation. The ideas in those objectives are explored to see what has been done and what might be done in terms of further research.

The advantage associated with this analytic approach is objectivity.  The reporters serve as editors to organize and present the facts.  They offer no opinions, perceptions, or acquired knowledge.  As such, facts are simple statements of existence.  Interpretation of those facts, utilization of those facts should be performed by experts in the subject.

The title was chosen based on the frequency of citation of ideas involving the three major objectives.

Table 1. Frequency of Citation of Ideas Involving Prevention, Mitigation, or Rehabilitation.

|  |  |  |
| --- | --- | --- |
| Topic | Ideas |  |
| Prevention | 164 |  |
| Mitigation | 2608 |  |
| Rehabilitation | 1686 |  |
| Total | 4458 | 0.85% |

If these terms represented objectives emphasized by author-specialists in disaster management, shouldn’t the total be more than 0.85% of the total ideas? Typically, major objectives are cited frequently indicating the consensus importance placed. It is possible that authors have chosen other terms to represent those objectives. Table 2 shows the frequency of citation of possible alternatives to -- rehabilitation.

Table 2. Frequency of citation of Ideas Involving Rehabilitation, Response, Recovery, or Resilience.

|  |  |  |
| --- | --- | --- |
| Topic | Ideas |  |
| Response | 3108 |  |
| Recover | 1097 |  |
| Resilience | 3180 |  |
| Rehabilitation | 1686 |  |
| Total | 8071 | 1.50% |

The frequency is now almost doubled. The terms – response and recovery – are newer additions to the vocabulary of disaster management. Resilience was introduced earlier. Analysis in Chapter Four (Rehabilitation) will include a temporal analysis of these ideas as well as their interrelationships.

Chapter 1:    Ideas, Essential Data

        Ideas have been used in creativity throughout the centuries.  However, the current dictionary definition defines an idea as the result of private, mysterious, and miraculous interaction between the subconscious and the conscious.  If the idea is restricted to that definition, the ability to duplicate the generation of a new idea would require long periods of time emulating experts.  That practice has been routinized in graduate studies.  The success of that, however, is questionable, with about 50% of would-be graduates dropping out of their programs before attaining the final result.

        The more recent definition of an idea separates creation from recognition.  The modern definition involves a pair of informative terms (nouns, adjectives, or gerunds) presented by the author in the same sentence.  The sentence is the boundary for contextual meaning and pairs of informative terms within those bounds provide this meaning. This definition further facilitates software recognition of individual sentences, informative terms (by endings and contextual connections), and combinations of terms within the sentence. The ability of software to accomplish the recognition, extraction, organization, and subsequent utilization satisfies the next important definition, namely, artificial intelligence.

However, the label could be misleading. Is intelligence the result of long periods of clerical effort? Traditionally, the answer has been “yes”. Would the answer be “yes”, if the question was posed as follows:

Does retrieval of documents based on matching specific terms from a search list to an index list constitute intelligence? Minimally perhaps.

Does analysis of documents involving the breakdown of combinations of text to specific terms and combinations represent intelligence? Again, matching and decision-making are involved. Minimally perhaps.

Does sorting and storage of results represent intelligence? Minimally perhaps.

The functions of retrieval, analysis, and organization are more mechanical actions. Those can be performed by software tirelessly, and accurately. If there is intelligence involved, it was obtained from a human. As such, the computer might deliver desired results, but it was simply following orders provided by some human. Calling that artificial intelligence might be a bit of a stretch. It certainly is clerical efficiency.

        The advantages are:  reduction in time spent in text analysis, the virtual elimination of clerical functions by the human, the increased accuracy in processing, and the shift to performing higher cognitive functions by the human.  Providing the human with time and strength to consider the truly intelligent attributes – measures, criteria, and decisions – is the reward provided by clerical efficiency (artificial intelligence!)

    Chapter 2:  Prevention Ideas

        A major objective of disaster management is the prevention of damage and disease associated with the natural or manmade disasters.  The analysis considers ideas presenting prevention as the primary term coupled with a related term, thus completing the definition of an idea. The ideas are presented in two ways.  The first is the declaration of facts detailing what has been studied.  The second considers possible research designs by arranging the ideas in ways not previously considered.  The reader is challenged to interpret the results in terms of effective or less than effective management.  In addition, the reader is challenged to estimate the additional knowledge acquired as a consequence of the research.

Chapter 3:  Mitigation Ideas

            A major objective of disaster management is the reduction of damage and disease associated with the natural or manmade disasters.  The analysis considers ideas presenting mitigation as the primary term with a related term, thus completing the definition of an idea. The ideas are presented in two ways.  The first is the declaration of facts detailing what has been studied.  The second considers possible research designs by arranging the ideas in ways not previously considered.  The reader is challenged to interpret the results in terms of effective or less than effective management.  In addition, the reader is challenged to estimate the additional knowledge acquired as a consequence of the research.

  Chapter 4:  Rehabilitation Ideas

                        A major objective of disaster management is the restoration of damage and recovery from disease associated with the natural or manmade disasters.  The analysis considers ideas presenting rehabilitation as the primary term with a related term, thus completing the definition of an idea. The ideas are presented in two ways.  The first is the declaration of facts detailing what has been studied.  The second considers possible research designs by arranging the ideas in ways not previously considered.  The reader is challenged to interpret the results in terms of effective or less than effective management.  In addition, the reader is challenged to estimate the additional knowledge acquired as a consequence of the research.

            Chapter 5.  Ocurrence of Major Disasters -- 1990-2016

               Organizations record the occurrence of major disasters in all parts of the world.  The occurrence of wind events has probably increased over the time period.  Similarly, occurrence of earth events probably has also increased.  If so, the role of climate can be introduced and the research involving climate explored.  If not, then climate may not be the critical factor??

**Chapter 6. Summary of Ideas and Relationships.**

**The frequencies of ideas representing major objectives and alternatives will be presented. The challenge to the reader is the interpretation of the data. Is there evidence of disaster management or has the study of disasters fallen into disrepute? Can frequencies and relationships offer sufficient information to make such judgements? Will suggested research designs, if executed, provide new and useful knowledge? Will new leaders in the quest for effective disaster management emerge and what part of the world will they represent?**